



**NTPC Limited**  
(A Government of India Enterprise)  
CORPORATE CENTRE

Ref. No.:01/ FA/ISD/Compliance/2021-22

Dated: 02.08.2021

Listing Department National Stock Exchange of India Limited 'Exchange Plaza', C-1, Block G, Bandra Kurla Complex, Bandra (E), Mumbai – 400 051. <b>Scrip Code-</b> NTPC	Corporate Relationship Department, BSE Limited, Rotunda Building, P J Towers, Dalal Street, Fort, Mumbai – 400 001. <b>Scrip Code-</b> 532555
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**Sub: Investor Presentation made at the 17<sup>th</sup> Annual Analysts and Investors Meet of NTPC Limited**

Dear Sir,

In terms of Regulation 30 of SEBI (LODR) Regulations, 2015, we hereby submit the Investor Presentation made at the 17<sup>th</sup> Annual Analysts and Investors Meet of NTPC Limited.

Yours faithfully,

(Aditya Dar)  
Executive Director (Finance)



**GROWING TOGETHER WITH POWER**



**WELCOME TO 17<sup>TH</sup> ANNUAL ANALYSTS & INVESTORS MEET**

# NTPC – Vision, Mission and Core Values



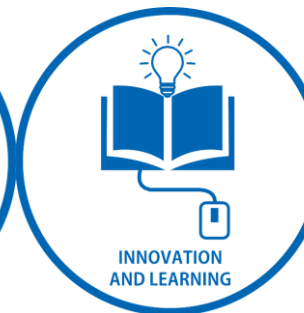
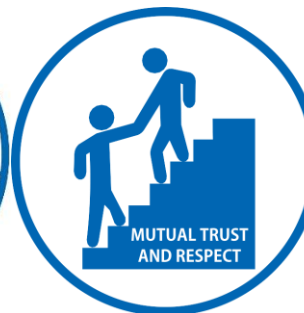
## Vision

To be the World's  
Leading Power Company,  
Energizing India's Growth

## Mission

Provide Reliable Power and Related  
Solutions in an Economical, Efficient and  
Environment friendly manner,  
driven by Innovation and Agility

## Core Values



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# Outline of the Presentation



- 
- 1 Company Overview
  - 2 Spearheading Energy Transition
  - 3 Sustainability Initiatives
  - 4 Transforming Power Sector
  - 5 Key Growth Pointers
  - 6 Operational Excellence
  - 7 Robust Financials



# NTPC – Exceeding Expectations Setting New Benchmarks



Largest Power Generator in India

Installed capacity of 66,885 MW  
Generating 23% with 17% Installed Capacity

Leading Energy Transition

Plan to have 60 GW Renewable Capacity by 2032  
Developing largest solar power park of the country

Clear Growth Visibility

17 GW capacity under construction  
Plan to become 130+ GW company by 2032

O&M and PM Excellence

3,824 MW Commercial Capacity Addition in FY21  
Maintaining consistent lead over All India PLF

Highest ever profit/realization

Posted highest ever profit of ₹ 13,770 crore in FY21  
Highest ever realization of more than ₹ 1 Lakh crore

Leapfrogging on ESG Front

ESG Strategy with clearly defined KPIs and targets  
1<sup>st</sup> Energy company to declare its energy compact goals



# Key Performance Highlights



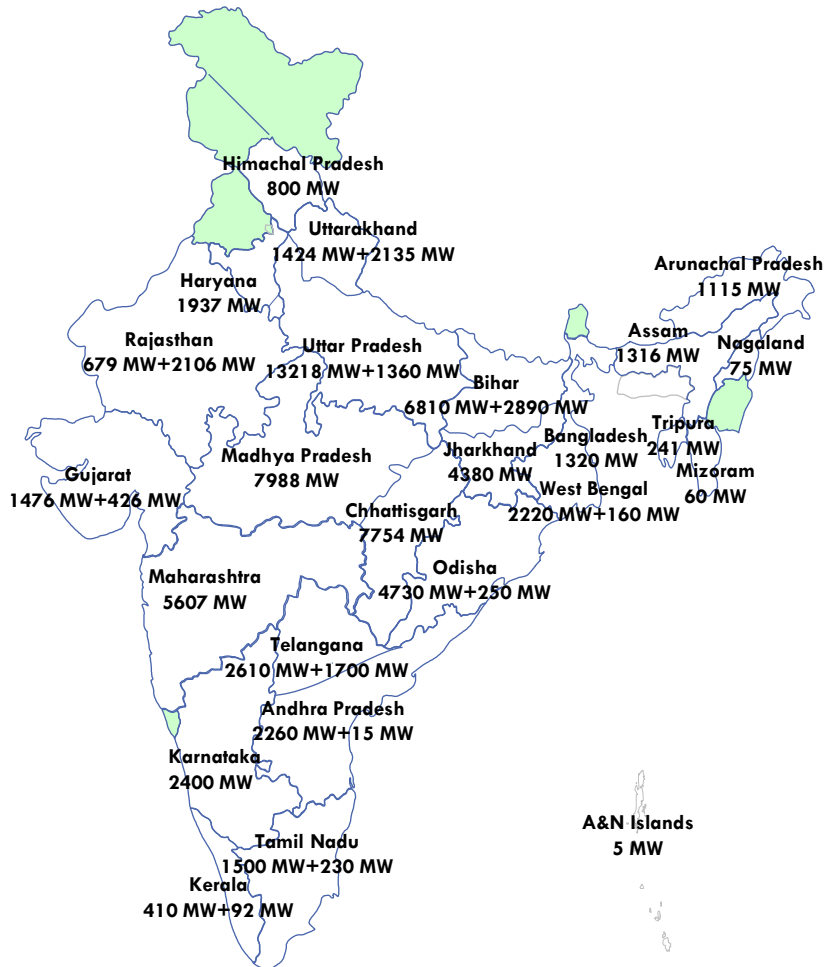
	FY 2020-21	FY 2019-20
Regulated Equity	₹ 66,338 crore	₹ 61,811 crore
Realization	₹ 100,950 crore	₹ 89,205 crore
Profit	₹ 13,770 crore	₹ 10,113 crore
Group Profit	₹ 14,969 crore	₹ 11,902 crore
Group COD	3,824 MW	8,260 MW
Group Generation	314 BU's	290 BU's



# Unparalleled Presence across the Nation

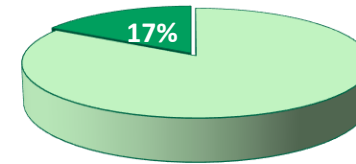


## Present + Under Construction Capacity

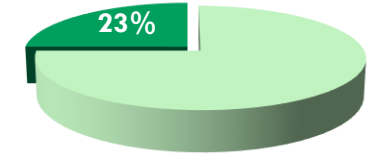


## Leading Market Share

Share of Installed Capacity  
(as on 31 March, 2021)



Share of Electricity Generated  
(during FY21)



Rest of India : 3,16,341 MW  
NTPC (Group) : 65,810 MW

Rest of India : 1068 BUs  
NTPC (Group) : 314 BUs

## Present Installed Capacity : 66,885 MW

NTPC Owned	Stations	in MW	Mix %
Coal	23	47,460	70.95%
Gas/Liquid Fuel	7	4,017	6.01%
Hydro	1	800	1.20%
Renewables	16	1,183	1.77%
<b>Sub-total</b>	<b>47</b>	<b>53,460</b>	<b>79.93%</b>
<b>Owned by JVs and Subs</b>			
Coal	9	7,814	11.68%
Gas/Liquid Fuel	4	2,494	3.73%
Hydro	8	2,925	4.37%
Renewables	5	192	0.29%
<b>Sub-total</b>	<b>26</b>	<b>13,425</b>	<b>20.07%</b>
<b>Total</b>	<b>73</b>	<b>66,885</b>	<b>100.00%</b>

Map not to scale





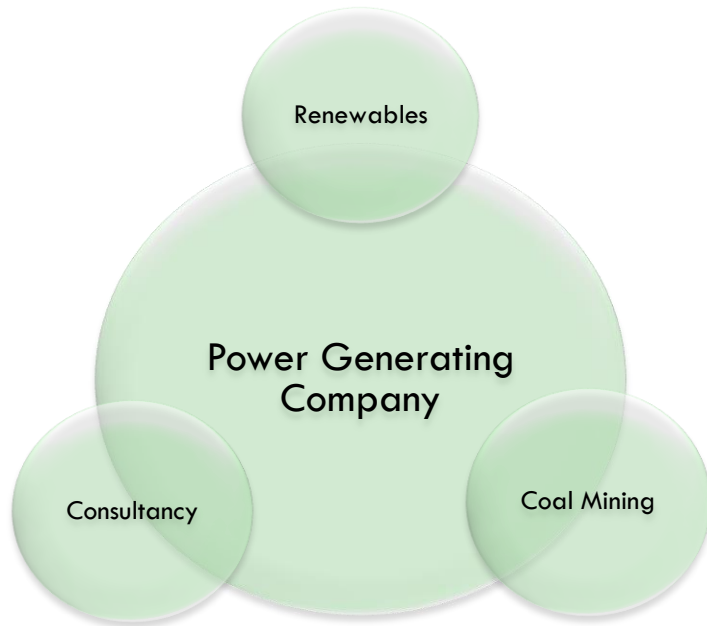
## Spearheading Energy Transition



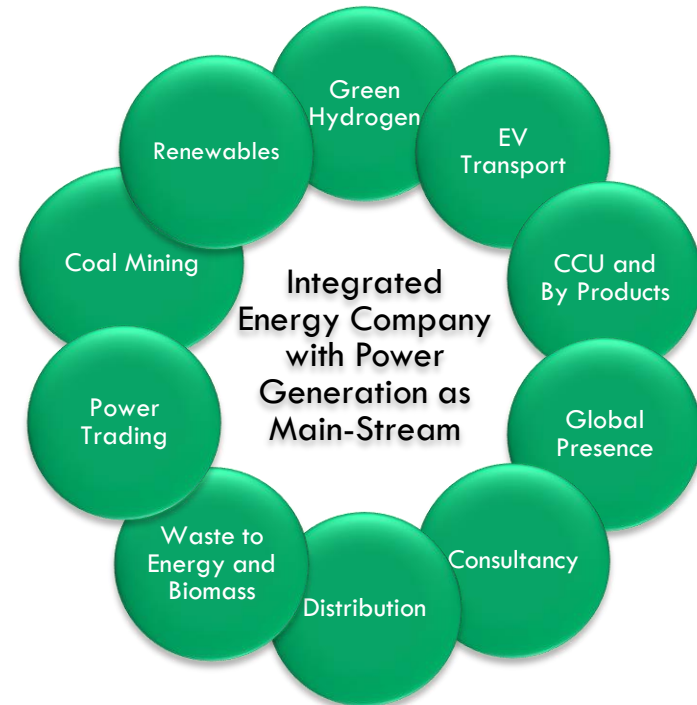
# Leading Indian Energy Company - Spearheading Energy Transition



2021



2032



Supplier of Clean, Green and Affordable Power - Supplier of Choice





-  Reliable and affordable
-  Cleaner & Greener
-  Efficient
-  Renewables
-  Green Hydrogen
-  Coal Mining
-  e-Mobility
-  Global
-  Distribution

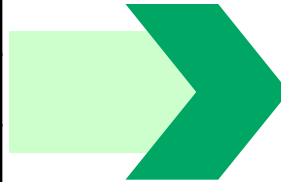


# Leading India's push towards Green Energy



## NTPC RE Plan - Moving towards 60 GW Renewable capacity by 2032

NTPC RE@PRESENT	In GW
Installed	1.375
Under Construction	3.009
Under Tendering	4.498
Total	8.882



NTPC RE@2032	In GW
NTPC RE Limited	44
Through Acquisitions	12
NTPC Standalone	4
Total	60

### Key Strides

- Subsidiary for RE business NTPC Renewable Energy Limited incorporated in FY21
- Won 1,885 MW of TBCB contracts since FY21
- Setting up country's largest Solar Park of 4.75 GW
- Plan for development of another ~10 GW UMREPP in various stages
- MOU signed with DVC for development of solar plants on DVC Reservoirs and land
- MOU signed with ONGC for JV formation for development of Offshore Wind Projects
- Technical and commercial due diligence completed for acquisition of 500 MW solar assets
- MOU with UT, Ladakh and Ladakh Autonomous Hill Development Council (LAHDC), for green hydrogen initiatives along with solar power generation
- EOI for setting up 1000 MWh of grid-scale battery energy storage system (BESS) at NTPC plants



## 4.75 GW UMREPP in Rann of Kutch, Khavada - Gujarat

- In-principle approval accorded by MNRE for development of this park as UMREPP
- Solar and Wind generation is envisaged from this park
- Part of the capacity shall be used for producing Green Hydrogen, which will be exported through nearest port
- Connectivity and LTA for first 500 MW is being applied and the same for balance capacity shall follow
- CTU has initiated activities for setting up of ISTS substation at 765KV/400KV and Transmission Lines at 765 KV to Bhuj
- Commissioning targets are 50% in 3 years and complete park in 5 years from allotment
- Considering the Renewable Energy Plans of Gujarat Government, potential of up to 10 GW of RE power exists in Gujarat itself
- Further, sale of power from this park can be targeted through any of the Tariff Based competitive Biddings, as the transmission charges are waived for RE Power till June 2025





## Sustainability Initiatives

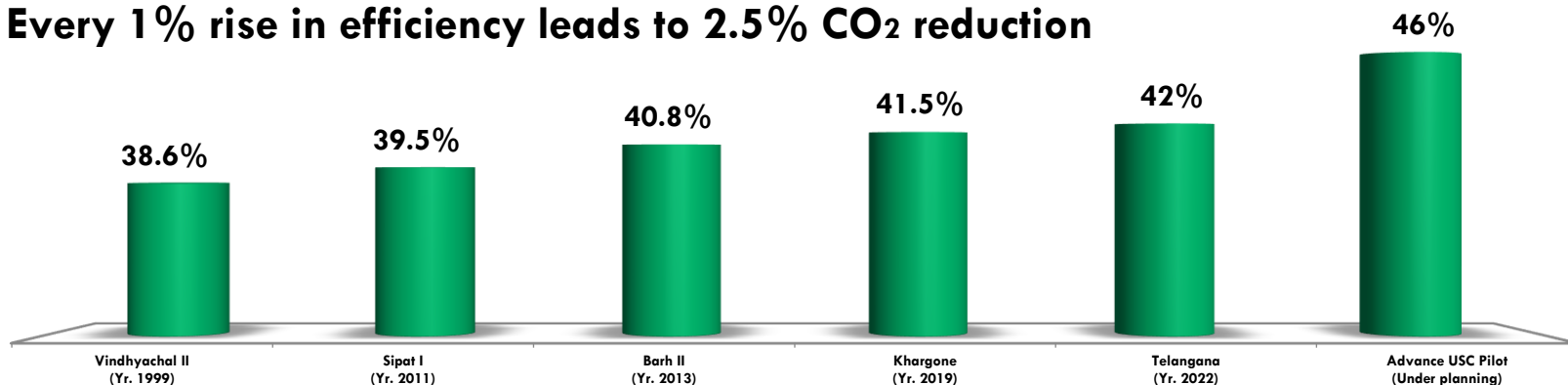
# Reducing Emissions - Increasing Efficiency



## Sustainability Strategy & key ESG initiatives

- NTPC's Sustainability Strategy "Brighter Plan" with clearly defined KPIs and targets brought out
- 1<sup>st</sup> Energy company to declare its energy compact goals - 60GW RE capacity by 2032 and 10% reduction in net energy intensity by 2032 compared to 2012 level
- Dedicated Sustainable Supply Chain guideline with focus on ESG/EHS assessment of suppliers
- Released "Water Policy-2021" to minimize the water footprint to extent possible levels
- Carbon sink - 36 million trees have been planted in and around NTPC projects
- Developing Mega Eco park at Badarpur which is bigger than New York Central park
- Regular interaction with MSCI and Sustainalytics to address controversies and sharing of data for improvement of ESG rating
- Won the prestigious CII-ITC Sustainability Award 2019 and 2020 (only PSU in the list)

## Every 1% rise in efficiency leads to 2.5% CO<sub>2</sub> reduction



# Sustainability Strategy - The Brighter Plan



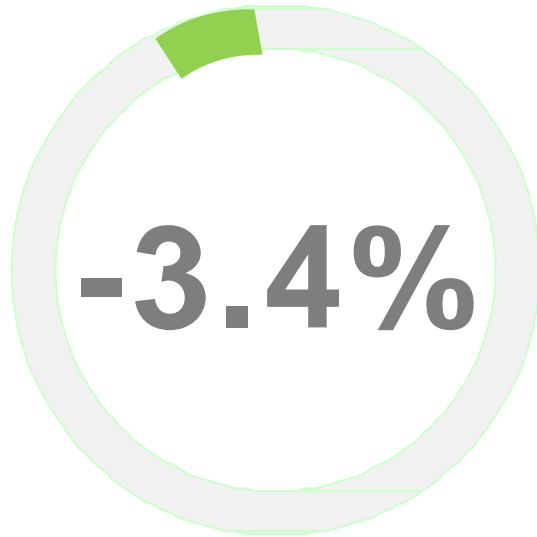
**Aim** to accelerate efforts in leading the energy transition to a decentralised, decarbonised and digitalised energy future on TBL (Triple Bottom Line) framework and setting new benchmarks in sustainability along the entire energy value chain



**Focus** on ensuring sustainability of business operations through co-creating innovative and sustainable solutions for better and greener energy future, leading to profitable business growth, reduced costs and mitigating risks of doing business in VUCA world

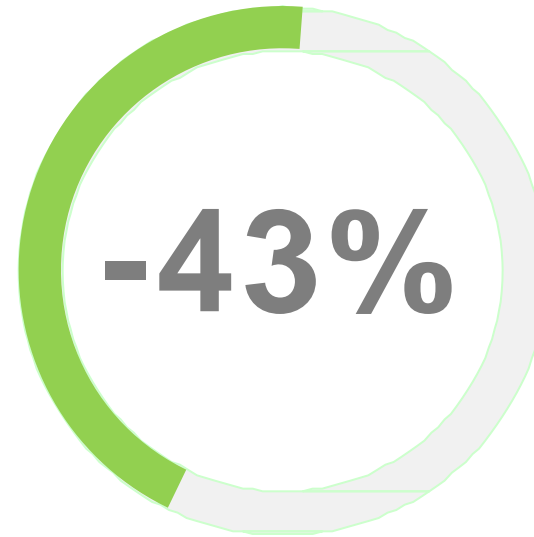


# Notable reduction in SCOPE 1 intensity and SCOPE 3 emissions



## SCOPE 1 Intensity

840 (gm CO<sub>2</sub>/kWh) - FY21  
870 (gm CO<sub>2</sub>/kWh) - FY20



## SCOPE 3

561 KT CO<sub>2</sub> - FY21  
981 KT CO<sub>2</sub> - FY 20





## Firm Action Plan to comply with New Environment Norms

### SO<sub>x</sub> Action Plan

- The first Flue Gas Desulphurisation System (FGD) has been implemented at Vindhyachal Stage-V-500 MW unit
- FGD systems are under implementation at ~59 GW capacity and are under tendering for ~4 GW capacity
- FGD systems are expected to be commissioned in entire operational and under construction capacity well within the timelines set by CEA
- FGD implementation to give advantage to NTPC plants in comparison with non-compliant plants in merit order

### De NO<sub>x</sub> Action Plan

- For low NO<sub>x</sub> combustion system, contracts have been awarded for 13 GW capacity
- Combustion modification implemented in 8.4 GW and taken with design in 25 GW capacity

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## Blue Sky Initiatives of NTPC

### Farm to Fuel

- Air quality improvement due to avoidance of farm fires
- Projected reduction in carbon footprint by saving about 6.4 MMTPA of CO<sub>2</sub>

### Bio-Mass Co-firing

- 9 plants have begun Biomass Co-firing
- Around 42,000 tonnes of agro residue based bio-fuel co-fired till now

### Circular Economy

- Establishing integrated facility in Delhi where Bio-Waste will be used to produce Bio-CNG, C&D waste to construction material and combustible fraction will be used for energy recovery

### Waste to Energy

- Developing WtE plants supporting in improving people's health & welfare
- Being developed in association with Municipal Corporations



## R&D wing of NTPC - Technology Focus Areas

### Carbon Capture & Utilization

- Development of 10 TPD 'CO<sub>2</sub> to Methanol' demo plant at Vindhyachal
- Indigenous development of Catalyst & Reactor for conversion of CO<sub>2</sub> to Methanol
- Development, design and setup of 10 TPD Flue Gas Carbon Capture and Methanol Demo Plant

### Water Technologies

- Design & Setup of 240 TPD Non-Thermal Forward Osmosis based high recovery system
- Activated filter media plant for treating STP Water
- Development of Electrodes and design of a prototype for the Hard/Sea water electrolysis

### Green Hydrogen

- Development of Sea Water Electrolyser for H<sub>2</sub> production
- Development of high temperature steam electrolyser
- Waste to Hydrogen

### Ash Technologies

- Development of Fly ash based Geopolymer concrete road and paver blocks
- Development of pond ash based controlled low strength setting material



# NTPC CSR Initiatives - Touching Lives of People



₹ 419 crore spent on CSR activities during FY21

## Key CSR Activities

- Contribution of ₹ 250 Crore to PM Cares Fund to support Government of India in its efforts to fight COVID-19
- Support for procurement of items for COVID-19 Vaccination Program
- Inoculated over 70,000 employees, their family members and associates across operations
- Support to the District Authorities and neighboring communities by providing food items, beddings, sanitizers, masks, etc. besides carrying out sanitization & awareness drives in villages
- Support for Ultraviolet based sanitization technology for PPE kits being developed by IIT Delhi & Chakr Innovation
- NTPC is bearing the cost of Education of 180 girl students under Girl Empowerment Mission (GEM)
- NTPC has adopted 18 Industrial Training Institutes (ITIs) and is setting up 8 new ones
- MoU with NSDC to develop skills of more than 30,000 youth including 8000 youth from Ladakh and J&K
- Support to Archery Association of India for promotion of Archery
- NTPC's CSR initiatives have touched lives of around 18 lakh people in one or the other way, at remote locations





Transforming Power Sector

# Strong Growth Drivers for Power Sector in India



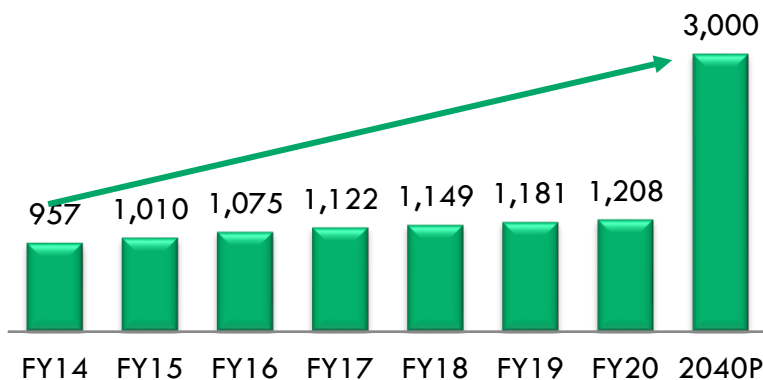
## Demand

- India's GDP is expected to grow significantly over next two decades on the back of our demographic strength
- India has low per capita consumption of electricity which is expected to rise to ~3,000 kWh by 2040

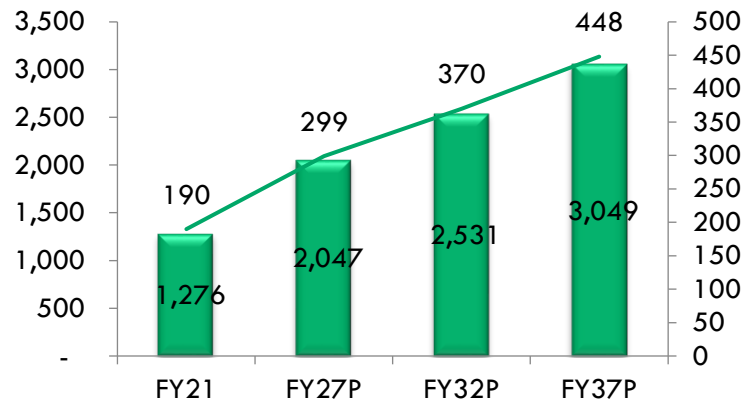
## Supply

- Electricity requirement in India is expected to grow in tandem with GDP growth
- Both peak load demand and energy requirement are expected to rise at a healthy pace

### Increasing Per Capita Consumption (kWh/Year)



### Projected Energy requirement & Peak Load (BUs) (GW)



With every Indian now having access to electricity power sector is poised for Long-term Growth



# Decade of Transformation Begins...



	FY21		FY30
Installed Capacity	~382 GW	➔	~817 GW
Generation (in BUs)	~1,382 BUs	➔	~2,518 BUs
Peak Load Demand	~190 GW	➔	~340 GW
Per Capita Consumption	~ 1,208 kWh	➔	~2,100 kWh
Renewable Capacity	~94 GW	➔	~435 GW
Coal Requirement	~650 MT	➔	~892 MT

A wave of new reforms - In the form of revised tariff policy & smart prepaid metering

Source: NITI Aayog, MOP, CEA, NTPC



# Our Key Growth Pointers



1

**Huge  
Capacity  
Addition  
Lined Up**

2

**Leading  
India's Push  
Towards  
Green Energy**

3

**Captive  
Coal  
Production  
for Fuel  
Security**

4

**Acquisitions,  
Diversification  
and New  
Avenues**



# Huge Capacity Addition Lined up

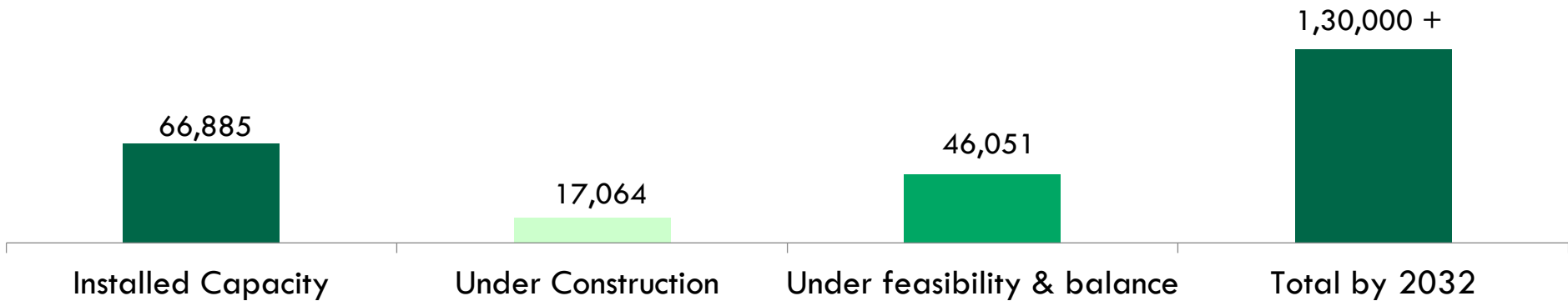


Ensuring Availability



Investment Approval

## Current development pipeline (in MW)



## Snapshot of Projects Under Construction

Fuel Mix	In MW
Coal	11,800
Hydro	2,255
RE	3,009
Total	17,064

Coal Technology	In MW
Ultra Super Critical	4,000
Super Critical	7,260
Sub Critical	540
Total	11,800

Group Mix	In MW
NTPC	8,560
Domestic JVs	7,184
International JV	1,320
Total	17,064

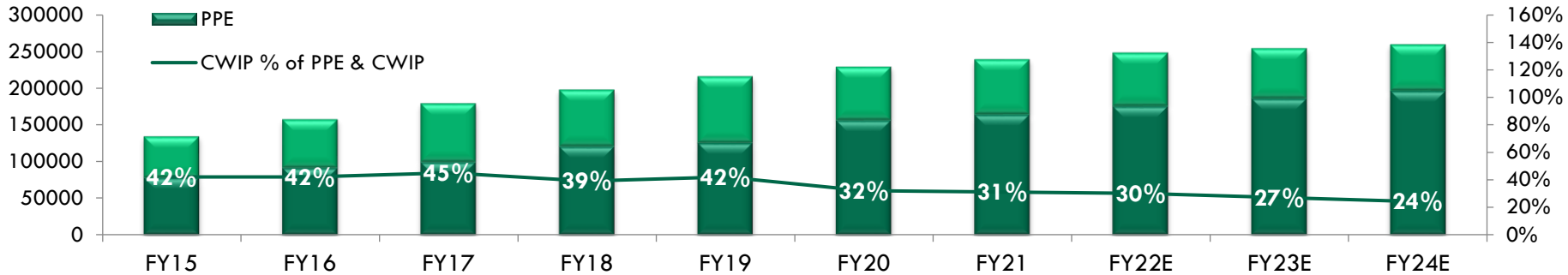




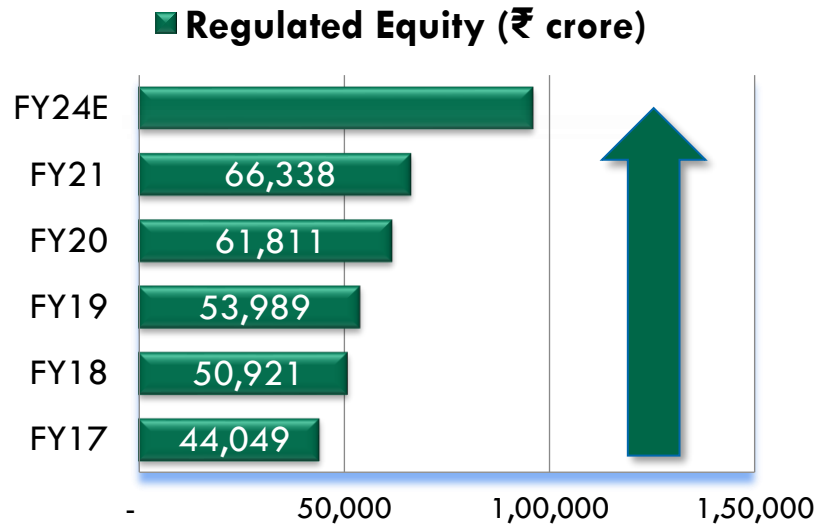
# Why to Invest in NTPC



## FY20 marked beginning of Reversal in CWIP ratio



## Expansion in Regulated Equity



All financial figures on standalone basis.

- FY20 marked beginning of Reversal in CWIP ratio and this will continue due to accelerated commercialization
- Fall in CWIP ratio will lead to ROE expansion as the equity blocked in CWIP starts earning
- Growth will continue and the turnaround from CWIP to PPE would be quicker in Renewable energy projects



## NTPC Coal Mining Portfolio

- Coal blocks with estimated geological reserves of about 5 BT
- Ultimate capacity of 71 Million Metric Tonnes of coal per annum when all mines reach their peak capacity
- NTPC has achieved a total coal production of **11 MMT** during FY21
- Cumulative **32.36 MMT of coal** has been produced till end of FY21

## Pakri Barwadih

- Mine declared commercial w.e.f. 1 April 2019
- 7.07 MMT of coal produced in FY21 (FY20 : 9.42 MMT)
- Amidst COVID-19 pandemic stoppage of work for about 94 days in PB mine led to fall in production

## Dulanga

- Mine declared commercial w.e.f. 1 October 2020
- 3.12 MMT of coal produced in FY21 (FY20 : 1.54 MMT)
- Coal production more than doubled in FY21 from Dulanga coal mine

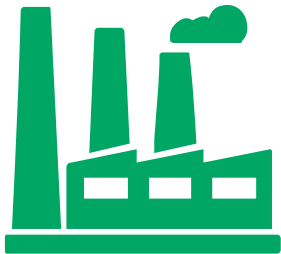
## Talaipalli

- Contract awarded for start of mining operation
- Coal extraction commenced in Nov'19
- 0.81 MMT of coal produced in FY21 (FY20 : 0.19 MMT)

## Other Highlights

- Cumulative expenditure of ₹ 6,998 Crore incurred till FY21
- Coal extraction targeted to start in Kerandari & Chatti-Bariatu coal blocks from FY23





## Acquisition of Power Assets

- Looking for acquisition of stressed power projects with good intrinsic value
- Acquisition of Jhabua Power Plant (under NCLT) in progress
- Studies and site visits under progress for ~4 GW capacity

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## Exploring other business opportunities

- Pilot project with complete value chain of Hydrogen being designed
- Setting up Energy Intensive Industries at NTPC Power Stations – Strategic blueprint and roadmap for Industrial park at Kudgi finalised
- Participating in RfP for privatization of discoms of UTs
- Exploring manufacturing of methanol from CO<sub>2</sub> in NTPC plants
- Identification of green field and new hydro projects including PSP for development

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## Waste to Energy Plants (WtE)

- JV with EDMC for setting up Integrated WtE project in East Delhi
- MOU signed between NTPC, IOC & SDMC for development of Plasma Gasification based WtE Pilot Plant at Okhla Landfill site

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## International Business

- Construction activities of a 1320 MW project in Bangladesh are under progress
- Appointed as PMC for 1785 MW solar projects in Cuba, Mali, Malawi & Togo
- Collaborated for international business through signing of MOUs with EGENCO, Malawi, Inter RAO Exports of Russia, Bank Muscat of Oman and Masen of Morocco





Operational Excellence

# Proven Operational Excellence



## Maintaining Leadership

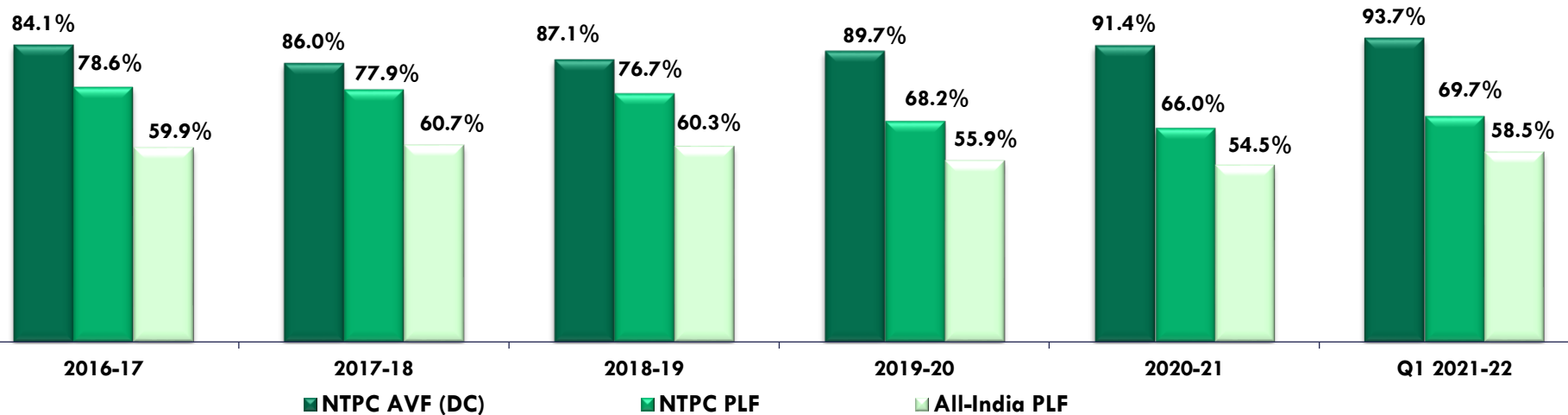
- Consistent double digit spread over National PLF during last 2 decades
- Group generation grows by 26% in Q1FY22 at 86 BUs
- NTPC Coal stations achieved PLF of 69.7% against All India PLF of 58.5%

## In-depth Monitoring

- Sound maintenance practices & real-time monitoring ensure high availability and efficient operations
- Periodic structured technical audits carried out for all units for identifying and correction of gaps

## Safety at Forefront

- Safety is integral to our working and we have renewed focus on safety
- We have upscaled our safety standards & inculcated complete safety culture



% for Coal Based Power Plants



# Sustaining Status of Competitive Power Producer



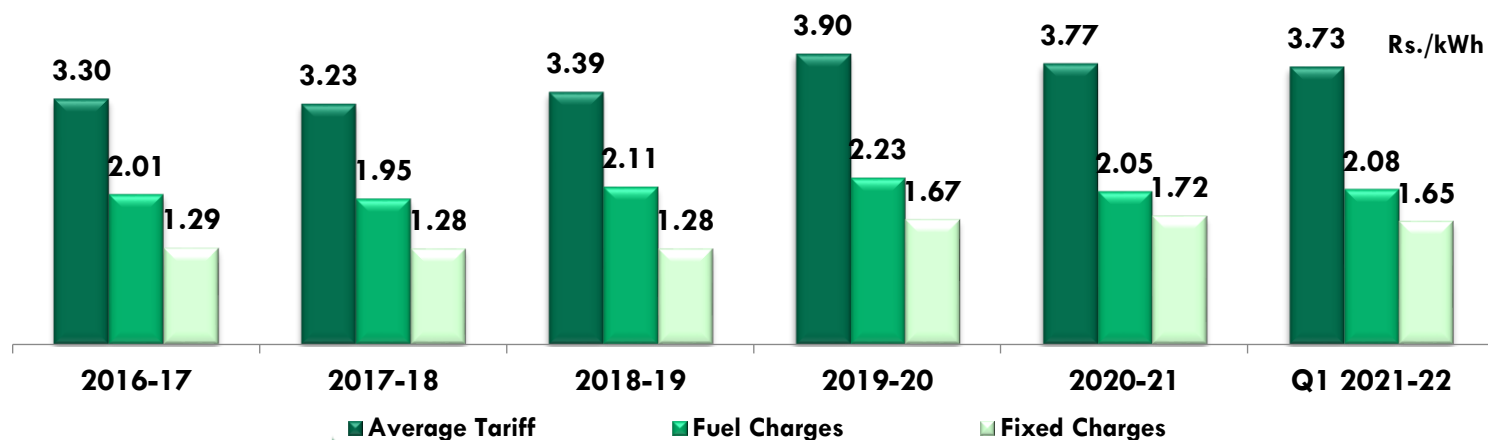
## Payment Security

- Regulatory mechanism assures Returns balancing risks and rewards
- TPA agreements in addition to payment security through LC mechanism
- Highest ever realization of more than ₹ 1 Lakh crore

## Regulations-2019-24

- ROE remains unchanged at 15.50%
- 85 kcal allowed on account of loss of coal GCV
- Security expenses excluded from normative O&M expenses
- Recognition of cost impact for meeting environment norms
- Time and cost over runs due to land acquisition classified as an “uncontrollable factor”

## Sustaining Competitive Tariff



# Long-term Fuel Security - Assured Coal Supply



## Single ACQ

- NTPC through sustained policy advocacy has signed a Supplementary Agreement with aggregation of ACQ (Annual Contracted Quantity) on CIL subsidiary level basis resulting in:
  - ✓ Optimum utilization of coal leading to reduction in ECR
  - ✓ Avoidance of loss of fixed charges due to coal shortage
  - ✓ More efficient outage planning/stock management of power plants

## Long-term FSAs

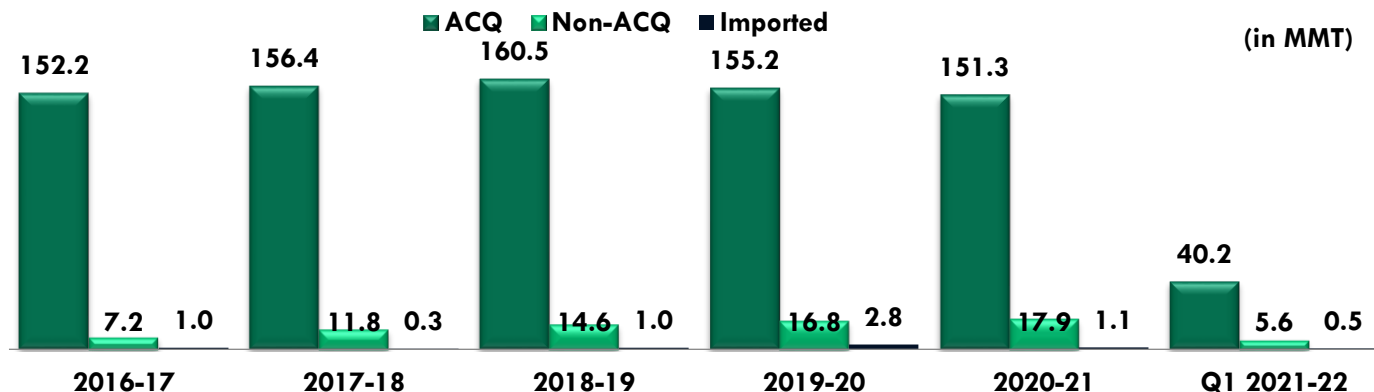
- Long term Fuel Supply Agreements (FSAs) have been signed with CIL and SCCL for supply of coal for total ACQ of ~178 MTPA

## Ensuring Logistics

- 60% of our coal-based capacity is linked by MGR/belt conveyor system to coal mines

## Assured Coal Supply

91% ACQ materialization during Q1FY22



## NTPC HR Vision

To enable our people to be a family of committed world class professionals,  
making NTPC a learning organization

## Leading to Consistent Improvement in Productivity of Manpower

Per Employee	2020-21	2019-20	2018-19
Revenue (₹ in crore)	6.16	5.78	5.02
EBITDA (₹ in crore)	1.97	1.72	1.34
Value Added (₹ in crore)	2.56	2.16	1.83
Generation (in MUs)	16.13	14.92	14.95
MAN-MW Ratio	0.32	0.35	0.39

- Proud of Building a High-Trust, High-Performance Culture
- Only PSU to consistently feature in Top 50 Best Companies to work for in India
- Bagged Corporate Wellness organisation of the year award







Robust Financials

# Growing Revenue with Robust Margins



Amount in ₹ Crore

Particulars (Standalone)	FY21	FY20	Chg. (in %)	Q1FY22	Q1FY21	Chg. (in %)
Revenue from Operations	99207	97700	2%	26039	23453	11%
Fuel & Energy Purchased	55881	57018	-2%	14920	12369	21%
Gross Profit	43326	40682	6%	11119	11084	0%
Gross Margin	44%	42%		43%	47%	
Other Income	4346	2778	56%	764	568	35%
Operating Expenses	14522	13589	7%	3680	3339	10%
<b>EBITDA</b>	<b>33149</b>	<b>29871</b>	<b>11%</b>	8203	8313	-1%
<b>EBITDA Margin</b>	<b>32%</b>	<b>30%</b>		31%	35%	
Depreciation	10412	8623	21%	2675	2530	6%
Finance Cost	7459	6782	10%	1989	2083	-5%
PBT (incl. exceptional item)	13916	14466	-4%	3539	2898	22%
Tax	1925	9182	-79%	1181	1230	-4%
Movement in Reg. Def. Bal.	1779	4829	-63%	787	803	-2%
<b>Profit for the period</b>	<b>13770</b>	<b>10113</b>	<b>36%</b>	3146	2470	27%
<b>Annualized EPS (in ₹)</b>	<b>13.99</b>	<b>10.22</b>	<b>37%</b>	3.24	2.50	30%



# Expanding Consolidated Financials



Amount in ₹ Crore

Particulars (Group)	31.03.2021	31.03.2020	Change	Change (in %)
Share of profit of JVs	684	405	279	69%
Profit of subsidiaries	1,738	1,584	154	10%
Group Debt	1,94,243	1,84,073	10,170	6%
Group Net Worth	1,29,262	1,22,156	7,106	6%
Group Regulated Equity	84,252	77,233	7,019	9%
Group Revenue	1,15,547	1,12,373	3,174	3%
<b>Group EBIDTA</b>	<b>37,990</b>	<b>34,445</b>	<b>3,545</b>	<b>10%</b>
<b>Group Profit</b>	<b>14,969</b>	<b>11,902</b>	<b>3,067</b>	<b>26%</b>



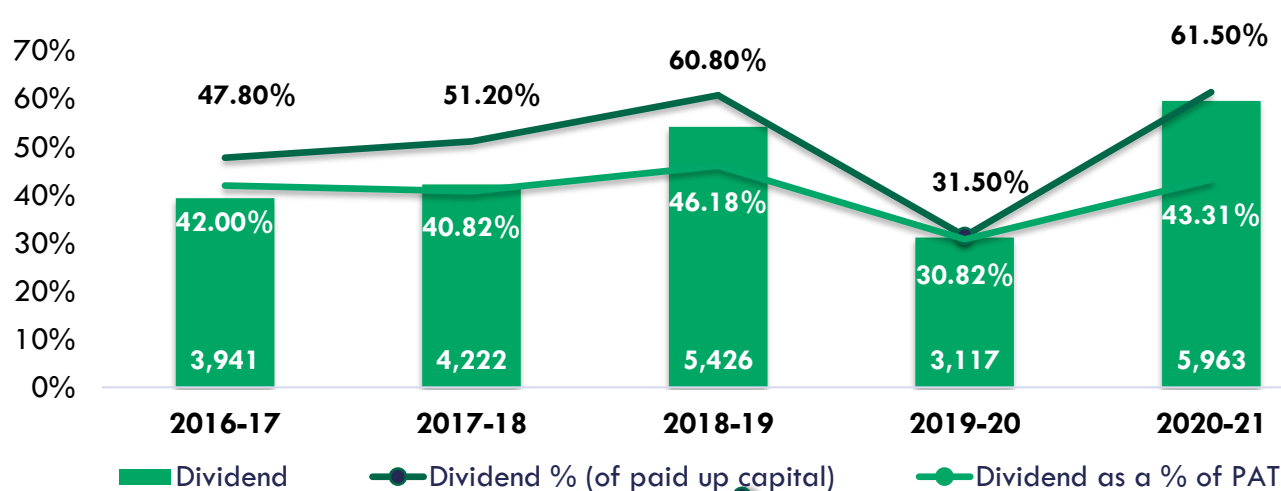
# Strong Financials with Balanced Pay-outs



Amount in ₹ Crore

Particulars (Standalone)	31.03.2021	31.03.2020	Change	Remarks
Gross Fixed Assets	2,11,557	1,92,898	<b>18,659</b>	<ul style="list-style-type: none"> <li>Increase in GFA exceeds increase in CWIP</li> </ul>
CAPEX (for the period)	20,686	24,039	(3,353)	<ul style="list-style-type: none"> <li>Addition of standalone commercial capacity of 2490 MW in FY21</li> </ul>
Capital Work-in-Progress	75,344	73,067	<b>2,277</b>	
Debt	1,61,629	1,52,694	8,935	<ul style="list-style-type: none"> <li>Avg. cost of debt reduced to 6.24% in FY21 from 8.07% in FY15</li> </ul>
Net Worth	1,18,985	1,13,569	5,416	
Weighted Avg. cost of debt	6.24%	6.81%	(0.57)%	

## Balanced Payouts



- Committed to deliver sustainable value to shareholders
- Balancing payout with deployment for growth plans
- Buyback of 2% equity during FY21



# NTPC - A COMPELLING INVESTMENT



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# Thank You

